

The National Geographic Magazine

AN ILLUSTRATED MONTHLY



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Mar. 13.—A Voyage on a steam-whaler to the Antarctic Continent: HENRI BUCHERAN-VING, of Norway. (Lantern-slide illustrations.)

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Mar. 2.—Across the Canadian Plains to Banff, Alberta: W. J. MCGEE. Excursion to Mt. Rainier, Washington: BAILEY WILLES.

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Mar. 30.—The Glaciers of Alaska: HARRY FIELDING REED.

Technical Meetings, Cosmos Club Hall, 8 to 10 p. m.

Mar. 6.—The Adaptations of Plants to Desert Environment: F. V. COVILLE. (Lantern-slide illustrations.)

Mar. 22.—On the physiographic Development of the District of Columbia Region: N. H. DARTON. (Lantern-slide illustrations.)
Use of geologic Control Lines in geographic Work: GILBERT THOMPSON.

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Extra tickets for the afternoon lectures, 25 cents each or \$1.50 for the course of seven lectures, can be obtained at the office of the Secretary or at Metzerott's music store.

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THE SO-CALLED "JEANNETTE RELICS"

By PROFESSOR WILLIAM H. DALL

Much interest has been excited by the recent rumor that news had been received from Nansen, via Siberia. In discussing the rumor I mentioned that the supposed relics of the *Jeannette* found off Julianehaab, in Greenland, were in all probability in no way connected with the *Jeannette* expedition, but were due to a boyish prank of some of the members of the Greely relief expedition of 1884. In attempting to formulate his impressions of an interview with me during which the subject was discussed, and which were not revised by me, the reporter unfortunately fell into some inaccuracies, not unusual in a person unfamiliar with the technicalities of arctic exploration, but for which the telegrams to the press made me responsible. It seems desirable, therefore, to lay before those interested in such matters a statement of the facts bearing on the two questions involved, namely, Were the relics really derived from the *Jeannette* expedition? and, if not, were they the result of a mystification, as above suggested? The first is of course the only one of importance to geographers, for if the relics were spurious it matters but little whence they were derived. The facts are now in order.

1. The *Jeannette* sank June 11, 1881, in the Arctic sea, about 180 miles northwest from the New Siberian islands.

2. The Greely relief expedition of 1884 reached the coast of Greenland in May; the *Bear* met the pack ice near Godhavn about May 13; the *Thetis* and *Loch Garry*, May 22; the *Aler* on

June 5. The latter left Godhavn June 9 and reached Upernivik June 13.

3. On June 18 some Eskimo found on the surface of an ice floe off Julianehaab, in southwest Greenland, some articles, which were turned over to the Danish officer in charge of that settlement, Herr Lytzen, who sent them to a friend in Copenhagen. These comprised, among other things, some broken biscuit boxes, a pair of oilskin trousers, said to have been marked Louis Noros (the name of one of the *Jeanette* survivors, who was a member of the Greely relief expedition of 1884), and a number of written papers, especially a list of the boats of the *Jeanette*, and a list of provisions signed by De Long, the commander of the *Jeanette* expedition, and stated to be entirely in his or a single hand-writing.

4. The Greely relief expedition left Greenland from Godhavn July 9, without touching at Julianehaab.

5. In the latter part of the winter of 1884-'85 a Danish correspondent wrote to Dr Knud Bessels, formerly of the *Polaris* expedition and a well-known arctic expert, at Washington, stating that news of these various relics had been received in Copenhagen and requesting his opinion as to their authenticity. The substance of this letter was communicated to me by Dr Bessels, who was much interested in the find, as, if genuine, it obviously furnished important data toward a knowledge of the drift in the polar regions. The presence in Washington during 1885 of many members of the relief expedition, in connection with the various investigations which followed their return, enabled Dr Bessels to interview many of the seamen as well as their officers and to accumulate a large mass of notes from his examination of them. On one or two occasions I was invited to be present when some of these men called on Dr Bessels. The well-known tendency of articles on the surface of ice, under the influence of the sun, to sink through it to the level of the water—even such trifles as bird's feathers or dead leaves being rapidly engulfed, as I have often personally noticed—led to doubts as to the possibility of the articles mentioned having remained on the surface of the ice for three years during a drift of 3,000 miles, exposed to the elements. The possibility of the preservation of written papers under such conditions seemed almost incredible. The close approximation of the dates of the presence of the relief expedition on the west Greenland coast and that of the finding of the relics was also suspicious. The testimony of the seamen interviewed was, in

brief, to the effect that the presence of *Jeannette* survivors on the relief expedition had suggested to some one the possibility of producing a sensation in the fleet which for some time followed the foremost vessels; that in a spirit of boyish levity this hoax was conceived and carried out, with no intention of serious deception or thought of the possible consequences. No names were mentioned and the evidence was to the effect that a general impression prevailed among the men that some such prank had been played rather than that any particular man questioned was personally cognizant of the act. Dr Bessels gathered an account of evidence tending to support this hypothesis, which he showed me and which covered forty or fifty pages of foolscap. This record was afterward burned, with his library and other papers, in a fire which destroyed his residence at Glendale, D. C. In consequence Dr Bessels communicated to his European correspondents his belief that the relics were fictitious and the result of a hoax. I stated to Dr Rank and others who inquired of me the same conclusions.

6. In 1888 Dr Nansen made his celebrated journey across Greenland and presumably heard of the relics there. Before his return, Dr Bessels died in Germany, where he had taken up his residence. Up to this time either the doubts which had been thrown on the authenticity of the relics, or some other reason, had prevented them from exciting much interest, and the owner seems to have resisted any attempt to verify their authenticity by sending photographs or originals of the papers to America when requested. The papers and other objects were placed in a box in a garret and, after the death of the owner, were burned as worthless, with the acquiescence of the widow. As Herr Lytzen had published an account of them (*Geogr. Tidsskr.*, viii, 1885-'88, pp. 49-54) and the finder and possessor alike acted in perfect good faith throughout, it is probable that after Dr Bessels' opinion was communicated to him, the owner attached no great value to the objects, otherwise his wife could hardly have been ignorant of it.

When Dr Nansen endeavored to examine these objects with a view of determining their authenticity, they were no longer in existence.* One of his friends, whose name has slipped my memory and whose letter is temporarily inaccessible, wrote to me on Nansen's behalf, as he explained, asking my opinion,

* See *Rep. Geogr. Soc. Paris*, Nov. 14, 1893, in *Geogr. Journal*, Jan., 1895, pp. 1-22.

which was sent some time before the starting of Nansen's latest expedition. Baron Nordenskiöld was also informed some time before Nansen sailed, so that there is no doubt that Nansen was cognizant of the fact that the authenticity of the relics was seriously questioned. He had previously admitted as much in his paper above cited, but did not on that account relax his faith in them.

Conclusions.—It is evident that the proof that the relics were the result of a hoax is not complete, and, in the nature of things, unless the parties actually concerned shall admit it, is never likely to be completed. Each person will form his own opinion from the data submitted. I have spent some ten years of my life at sea, nearly half of the time in command of a United States surveying vessel, and I am quite aware of the nature of sailor men and sailors' evidence. Dr Bessel was for years my intimate and valued friend and associate, and in all our intercourse nothing ever occurred to lead me to doubt his earnest endeavor to get at the truth of this matter. My own conclusions are, first, that the relics were not authentic, and, second, that they were probably due to a hoax, as stated above. In support of the first conclusion, beside the data given, the probability that De Long himself would be writing out receipts for stores is very small. There has been since 1848 an average of two or three ships a year lost in the ice north of Bering strait, and in the vicinity of the point where the *Jeannette* entered the pack. Not a single relic of all the enormous fleet of over one hundred wrecks has ever been identified on the Greenland coast, where wood has always been of the greatest value. Driftwood from northern rivers is cast up on the Greenland coast more or less every year, but there is no evidence that it comes from points east of Nova Zembla. It is not impossible that some of it does, but it cannot be proved. Some twenty odd years ago a throwing-stick, of the pattern used at Port Clarence, near Bering strait, came ashore on the coast of Greenland, near Godthaab, and was presented to the museum at Christiania by Dr Rink.* When one remembers how the crews of whaleships collect curios which they carry to all parts of the world, and which are often thrown away or lost in the most unexpected places, the certainty that this stick drifted from Port Clarence, a distance of not less than 4,000 miles, is evidently not to be taken for granted. I have received from lagoon on the

* Cf. *Geog. Tidsskr.*, ix, No. 4, pp. 13-8, Copenhagen, 1887.

west side of the peninsula of Lower California, formerly frequented by whalers, marine shells unquestionably of north European origin, *Buccinum undatum* especially, which is not known in the Pacific at all, and I have also received Indo-Pacific species, as well as coconut shells, collected by John Murdoch, from the shores of the Arctic ocean, north of Bering strait. That the drift of the *Jeannette* was due to the prevalent winds is beyond question, as already shown by Melville, and as may be worked out by anybody from the data. That, if continued, it would have passed across the Pole, as argued by Nansen, is a pure assumption, though a very enticing one. Certainly no one interested in arctic work but must most heartily wish that that courageous explorer may succeed in proving his hypothesis and return in safety to claim the laurels his success would earn.

In regard to the second point, that of the origin of the so-called relics, if regarded as fictitious, I have already stated my conclusion that the story of the box seems sufficient to account for them. To be perfectly impartial, however, one must admit that the currents about southwest Greenland are such that objects set adrift on the ice from any great distance to the northward of Julianehaab would usually be set over to the westward rather than in shore, although this general rule is subject to exceptions, due to strong westerly winds. This fact alone I suspect was sufficient to satisfy Nansen, whose hypothesis was already framed; but it must be remembered that the Greenland current does not round cape Farewell with equal strength at all seasons of the year; that the advent of the relief expedition was exceptionally early; the influx into Baffin's bay had not begun, and that along such a coast as that of Greenland eddies and reverse currents cannot fail to occur. While not without weight, I cannot assign to Nansen's objection sufficient weight to overcome the other indications, which for me, at least, lead to the conclusion that the so-called *Jeannette* relics have not been shown to have any certain connection with the *Jeannette* expedition. Furthermore, there is no certainty that the Alaskan throwing-stick was brought to the coast of Greenland by oceanic currents, and even if it was, the time occupied in the transit and the route are alike absolutely unknown, so that speculations as to a drift across the region of the Pole receive from this incident no positive confirmation.

Admiral Sir E. Inglefield, the distinguished Arctic traveler, at the meeting of the Royal Geographical Society called to discuss

Nansen's plans, told of finding a fresh stick of Siberian pine, with the bark still upon it and which seemed to have been only a few months in the water, on the west shore of Wellington channel, which enters Baffin's bay from the west.* If such a tree could be carried eastward in a few months from Siberia to a point accessible by ships from Baffin's bay, why is it not more probable that this throwing-stick, lost near Port Clarence, was carried north and east by the well-known northeasterly shore current past point Barrow and so on to Baffin's bay and the Greenland coast?

At this meeting such Arctic authorities as Admiral Sir George Nares, Captain Wharton, Hydrographer R. N., ex-Hydrographer Sir George Richards, R. N., and Sir Joseph Hooker united in the opinion that nothing was known about the direction or existence of sea currents in the region Nansen hoped to traverse, and that all opinions in regard to them must be purely speculative. The doubtful character of the so-called *Jennette* relics was also distinctly pointed out.† It cannot be said therefore that Nansen pursued his plans in ignorance of the doubtful elements of his hypothesis, but rather that his courage, energy, and audacity were such that he was willing to risk everything to put his speculations to a final test.

NANSEN'S POLAR EXPEDITION

By GENERAL A. W. GREELY,

Chief Signal Officer, United States Army

The continuing interest of the unsolved polar mystery has been strikingly illustrated by the eagerness with which the press of the world has caught at every word that seems to indicate the success and safety of the brave Norwegian in his dangerous drift-voyage toward the north pole.

Dr Fridtjof Nansen, born in 1861, became famous by crossing, first of all men, the inland ice of Greenland in 1888 from Umiak, 64° 45' north, on the east coast, to Kangersnek fiord, 50 miles south of Godthaab. Later, he conceived a novel and dangerous plan for polar work. Ignoring the accepted rules of

**Geographical Journal*, Jan., 1893, p. 23.

†*Op. cit.*, pp. 19-24.

ice navigation—of avoiding heart-vent and following the projected lee of land-masses—he decided to put his ship to the ice to the north of the New Siberian islands, whence he believed that he would be carried by ocean currents across the pole to the Spitzbergen sea. His steamer, *Fenn*, 135 feet long with an oak hull 30 inches thick and stout red white greenheart, was built so as to resist a bar of pressure as well as a gun. The crew of twelve were experienced for five years, though he expected, by a drift of a mile over two miles per day, to reach the Atlantic in two years. No explorer of experience and used the plan, but with undaunted courage Nansen sailed June 24, 1893, and entering the sea of Kara was last seen to the east of Nova Zemba in September, 1893. If a ship, whether the *Tam* or points the way to the New Siberian islands, as events have since shown.

February 13 1874, a dispatch from Tromsø, on the north of Katchinland, an agent of Nasden, states that the expedition having reached the ice masses at the North Pole, was returning home. Two days later a dispatch from Anchorage confirmed the first report in general terms only. From that time on no credit was given to those who alleged to have returned except expedition or otherwise. Although the story was so generally repeated, it was not believed, but the story was created by scores of persons, both in Europe and this country, who did not find it possible that a story from the master of a ship was so simple from the north of Europe and were surprised that such news came from the Northern Ocean in this manner. The agents of the Norwegian press Nasden's report was a welcome story, and it was the subject of

As to a corroboration, however, on the west coast of the island, and while I was on shore, by Nause's practical proof of the history of a short voyage was correct, it may be said that Nause, the man best qualified to speak about the *deromestic*, died at the time I was on shore, and, consequently, without need to have a corroboration, it seems true. The writer, perhaps, called Nause a "deromestic" without reason, which, for the first time, seemed to have a good foundation in fact. Nause's case is of this kind. The reason for this is, however, to be explained.

While Nature's journey is not as short as if it was able to travel from the edge of the world to the North Pole, but if we really understand the North Pole, it is possible, before this year I was last year, it is safe to say that he will, as for my dream of

THE SUBMARINE CABLES OF THE WORLD

BY GUSTAVE HERBIE

The English give Professor (afterward Sir) Charles Wheatstone the credit of being the originator of submarine cables, that gentleman having laid before the House of Commons in 1840 a scheme for the laying of a telegraph cable across the channel between Dover and Calais, but his plans do not seem to have been favorably received.

In the United States, in 1842, Professor S. F. B. Morse experimented with a submarine cable between Castle Garden, New Governor's Island, New York Harbor, and a year later, in detailing the results of his experiments with an electro-magnetic telegraph in a letter to the then Secretary of the Treasury, J. C. Spencer, he said,

" . . . " The principal difference from the new is that a telegraph is made to act on an electro-magnetic principle, which may be easily carried across the Atlantic. Starting as this may seem now, I am confident the time will come when this project will be realized."

It was not, however, until 1850 that the first submarine cable of any importance was laid. This was the cable across the channel between Dover and Calais. It was made of copper wire, covered with gutta-percha to half an inch in diameter, the shore ends of the wire being doubly covered with gutta-percha and a wrapping of India rubber, and the whole encased in a double layer of Tine cable cloth work successfully on account of its defective resistance, and led to be a complete failure. Another difficulty was that the telegraphic communication was but maintained for a few hours, when it was suddenly interrupted, the cause being as was afterwards ascertained the cutting of the cable by a French fisherman, who, it is said, had just a piece of it to be astonished, and so, of course, got down with him speculatively. Now, covered with its coating of gold, so that as the day, to guard against such casualties the new cable, laid in the following year 1851 between Dover and Calais, was made much stronger, consisting of a wire encased with gutta-percha and forming a core to a wire rope as a protection. The cable was a very fine specimen of

As a consequence, the estate is subject to a number of estate tax consequences, which are discussed in more detail below.

In 1854, Mr. Cyrus W. Field, whose memory will ever be dear to the hearts of Americans, took up, in company with American and English capitalists, the project to connect Europe and America by a submarine cable, and on August 7, 1857, the laying of the first Atlantic cable was begun by the U. S. frigate *Albatross*, which sailed from Victoria, Ireland in the direction of Hatter's point, Newfoundland. When about 40 miles had been run, the cable broke and the steamer returned. In the following year, 1858, the attempt was renewed, H. M. S. *Agamemnon* with one portion of the cable, and the U. S. frigate *Albatross*, with the other part, meeting in the ocean, and about latitude 52° 12' north, longitude 33° 18' west to splice the cable together, and then to lay it, one ship sailing eastward and the other westward. In this attempt also the cable broke and the steamers returned to port, but a sufficient length of cable being left, another attempt was made later in the year and the laying was successfully accomplished over the whole route. American and European were united by telegraph and communication on August 16, and congratulatory messages were exchanged between the two Governments. This is what the Queen of England telegraphed to the President of the United States:

[illegible]

T-tube I resorbent film (mean \pm SD) flows:

[illegible]

But, alas, the joy over the greatest triumph of the age was destined to be of short duration. In less than a month the cable refused to work owing to some fault the nature of which could not be definitely ascertained. It was at last abandoned in despair, and no further attempt to lay another one was made until 1864 when the Atlantic Telegraph Company took with the Telegraph Construction and Maintenance Company a contract for a new cable between Valentia and Heart's Content and chartered the steamer *Great Eastern* to lay it. This cable was 2,273 fathoms long, and its weight was 3½ pounds per fathom. Its laying down commenced on July 2d, 1865. Mr Cyrus W. Field being on board the ship. But on August 2, after about 140 knots of cable had been paid out, the cable parted and the broken end disappeared from view. The *Great Eastern* remained near the scene of the accident until August 11, when she gave up the attempt to recover the cable and returned to Europe. If in another hope, and of desperation, was burned, and we may well imagine the feelings of those who had put their faith and their money into the undertaking.

The story of the attempt and of the successful recovery of the lost end in a year later by means of gun haul from a depth of over 2,000 fathoms is one of the most interesting chapters in the history of submarine telegraphy. But a few of the hair-raising incidents which befell the endeavor of laying of the first cable. At the outbreak, the probable expense of the voyage of Mr Field and his associates were to be finally rewarded with success. A new cable was ordered, and on July 13, 1866, the *Great Eastern* again started from Valentia and, with a further serious mishap, finished the laying over the same distance on July 27, when the cable was spliced to the shore end at Heart's Content. Moreover, on September 16 following, the *Great Eastern* recovered the lost end of the previous year, spliced it to the cable on board, and again, before the laying of it toward Heart's Content, was enabled to lay a complete line. Ever since that time we have had an uninterupted telegraphic connection with Europe, and this 1866 cable has become the pioneer of the longer, sturdier, deeper, and better.

Immense progress has since been made in the establishment of submarine telegraphic lines. A fleet of between thirty-five and forty steamers, specially constructed and equipped for cable

*A new cable, 2,273 fathoms long, was laid between Valentia and Heart's Content in 1866. It was the first cable laid between Europe and America.

service, springing into existence, and the present total length of the submarine cables of the world is, in round figures, 101,000 nautical miles, or enough to girdle the earth seven and one-half times at the equator. At an average cost of \$1,200 per mile, the entire system represents an outlay of \$192,000,000. Of the total tollage about one-eighth is under the control of various national governments.

The Hydrographic Office issued, in 1892, a book on "Submarine Cables," prepared by Mr. W. Littlehales as a part of the report of that Office on the survey made by the U. S. ship *Albatross* and *Thetis* for an oceanic cable route between San Francisco and Honolulu. It contains a large amount of interesting information, including valuable statistical data among which is a complete list of the submarine cables of the world, in detail. The tables being much too voluminous for publication in these pages, the following list of the more important cables has been compiled from them, the reader being referred to the original report for information concerning the shorter cables and for more complete data generally:

CABLES OVER FOUR HUNDRED NAUTICAL MILES LONG, OPERATED BY GOVERNMENTS

France: Marseilles to Algiers, 3 cables, 440, 440, and 500. Tenerife to St. Louis, Senegal, 805.

Cochin-China and Tonkin: Cape St. James to Thuan-An, 1,106. 300.

British India: Madras to Jack, 301, Jack to Bombay, 2 cables, 1,000 and 500.

CABLES OVER FOUR HUNDRED NAUTICAL MILES LONG, OWNED BY PRIVATE COMPANIES, ALSO TOTAL LENGTH OF CABLES OPERATED BY EACH COMPANY

Direct Spanish Telegraph Company, total, 708. Kennebuck Cove, Cornwall, to Las Arenas, near Bilbao, 487.

Holland and Bermuda Cable Company: Halifax, N. S., to Hamilton, 1,000.

Spanish Navarre Submarine Telegraph Company, total, 2,150. Cadix to Santa Cruz de Tenerife, 804. Tagan, Tenerife, to St. Louis, Senegal, 805.

West African Telegraph Company, total, 3,215. Accra to St. Thomas, 486. St. Thomas to London, 700.

Great Northern Telegraph Company, Europe and Asia, total, 8,462. Newbygge to England, to Arness, Norway, 424; Newbygge to Marstrand, Sweden, 500; Newbygge to Christiania, Denmark, 420. Amoy to Canton, China, 300. Outzaff to Nagasaki, Japan, 427, 4 cables to Nagasaki, 400. Nantank to Yokohama, Japan, 2 cables, 733 and 700.

PETER COOPER AND SUBMARINE TELEGRAPHY

In presenting to its readers a portrait of the submarine telegraph engineer of the world, *The National Geographic Magazine* was unwilling that this graphic representation of international communication should be unaccompanied by some reference to one of its earliest and most effective promoters, the late Peter Cooper. It is well to recall to this rising generation, as indebtedness to Mr Cooper for his efficient services in laying the foundation of the now elaborate network between two widely separated continents of the earth. With considerable reluctance, not only after repeated urging, one of the authors of this great work, the Honorable Arthur S. Hewitt, has outlined in a letter all too brief the part played by Mr Cooper. The letter is as follows:

"The story of the Atlantic cable has been so fully and so well told by the Rev Henry M. Field in his history published in 1872 by Messrs Scribner & Sons of this city, that only the briefest outline is necessary to call your attention to the origin of an enterprise which, at the time of its inception, was regarded with incredulity and whose prosecution and final success have been the subjects of a romance.

"My first knowledge of the enterprise was in 1854, when Mr Cyrus W. Field invited Mr Peter Cooper and other gentlemen to listen to the propositions of Frederick N. Gisborne, who had come to New York for the purpose of interesting capital in constructing a line of telegraph across Newfoundland, so as to get the news at once from the European steamers and transmit it either overland to the Gulf of St. Lawrence and thence by fast steamers to Cape Breton, whence land lines had been constructed connecting with our Atlantic system. In that interview my suggestion was made for it to be across the Gulf of St. Lawrence, because it was considered at that time whether any communication of such length could be maintained permanently. The amount of money required was not very much considered, and the gentleman proposed to be paid a sum of large money. ~~It was not until 1856 that the project was abandoned~~ well contented the Americans, not so much as a commercial speculation as from considerations of the advantage of early news in business transactions affecting the two continents. The Newfoundland Company

was organized, with Mr Cooper as its president and Mr Field as its active manager. The other gentlemen concerned in the undertaking were Moses Taylor, Marshall C. Roberts, Chamber W. White, and, at a later period, William G. Hunt. David Barclay Peck also took an interest and was legal advisor of the company.

Arrangements were made for the construction of the bond line without delay, and later when the experience of the European sub-marine cables established the practicability of longer lines, it was decided to lay the cable across the gulf of St. Lawrence, a distance of about eighty miles. The first attempt to lay the cable was a failure, owing to the imperfect arrangements for transporting the cable across the gulf, and the occurrence of a storm which caused the severance of the cable when the vessel engaged in laying it was midway between the two termini. It was determined, however, to renew the attempt, and in the following year it was successfully laid, and the organization of the company for intercepting rows at Cape Race was carried into effect. As a matter of course the error, too, was not a complete one. Its advantages were so apparent that the parties interested considered that the time had come to re-try the attempt to continue the cable from Newfoundland to the coast of Ireland. The idea was abandoned, the highest electrical authorities were consulted, and it was found that it was feasible.

Mr Field proceeded to England to organize a company, in which he succeeded, and which resulted in the attempt to lay the cable in 1857 made by the *Albatross* on the British side and by the *Agassiz* on the American side. I need not rehearse the story of the successive failures, of which the first one occurred in 1857 during the passage of that year, which is not wide rain throughout the country. Among others, Mr Field was compelled to surrender, and it seemed probable that any further attempt to construct and lay the cable would be abandoned. It was at this juncture that the strong commercial sense and mistaken faith of Peter Cooper came into play. When the financial straits of the project were stated, he urged Mr Field to undertake the responsibility of the enterprise, and he offered to advance and actually disburse the money required for Mr Field's expenditures, until so much as the success of the cable might be deemed entitled and assumed. Some of the other gentlemen concerned to participate in these adventures, and I cannot but think upon Mr Cooper was very anxious and gave great concern to his family. Nevertheless Mr Field soon recovered his confidence, and with undomestic courage

19. RUSSO-AMERICAN TELEGRAPH PROJECT OF 1854 '57

and indefatigable industry he finally succeeded in accomplishing the difficult undertaking with which his name and fame are so closely identified. So far as Mr Cooper and his family were concerned they did what they could to secure the success of the enterprise, and I think it may be justly asserted that, without Mr Cooper's assistance and a sincere faith in the final success of the undertaking, its realization would have been postponed for many years. In the end he was fully indemnified and perhaps amply rewarded, for his investment, but without detracting in the slightest from the credit which is justly accorded to Mr Field. I think I am justified in making, at your request, this brief statement in order to show that without the untiring courage and cooperation of Mr Cooper Mr Field would hardly have been in a position to achieve the triumph which he finally secured and for which his memory is entitled to the veneration of succeeding generations.

THE RUSSO-AMERICAN TELEGRAPH PROJECT OF 1854 '67

By PROFESSOR WILLIAM H. DALL

The possibility of constructing a line of telegraph overland through Siberia and north-western America had doubtless occurred to many, but the first person to endeavor to give practical effect to the conception appears to have been Mr Perry M. Collins, of Portland, who in 1846 and for some years subsequently was United States Consul at Nankow, on the Amur river, eastern Siberia. By dint of constant activity and perseverance Mr Collins succeeded in obtaining the concessions necessary to the construction of a line of telegraph with all needed accessories, from the Amur to the British Columbian line through the States and the Great American colonies and also through the British territories in America.

Continual mishaps in the course of the attempts to lay a workable cable across the Atlantic had led many to begin to believe that the plan was impracticable, though they had no doubt of their ability to construct and keep in working order shorter lines, such as that proposed across Herring Strait. The propositions of Mr Collins were laid before the Directors of the Western Union Telegraph Company, March 16, 1864. They ac-



accepted, by a unanimous vote, the transfer of his rights and interests, and on March 15 completed an organization for the carrying out of the project.

An expedition to explore the proposed route under Col. Cass S. Foster, formerly of the United States military telegraph corps, was immediately organized. Of the key members the Pacific expedition of 1853-54. The exploration of the Bristol Colonization line was directed by Fenn and Conway from Eastern America by Robert Schomburgk and that of eastern Siberia by Sergius Arsen. The United States detailed Capt. C. M. Sweeney of the United States Marine Service, and two other officers to the fleet fitted out by the company and the Russian government sent the aid of the corvette *Landoltz*. The first visit was paid to the Russian port of St. Ilya in March, 1864. In July parties were on the way to Siberia, Alaska, and Bering strait. Explorations during the following season demonstrated the practicality of the route selected, and saw a small amount of line constructed, every endeavor being made to carry out the project.

In 1867 the Atlantic cable at last proved itself a working success. On the other hand the experience gained by the expedition sent out in connection with the Russo-American project showed that the enormous expense of the proposed line would be so expensive as to make it impossible for it to compete with the Atlantic cable, commercially. Consequently the company decided to withdraw from the enterprise and in the autumn of 1867 the parties returned to California.

The route chosen was by the valley of the Fraser river in British Columbia and down the Yukon to the Yukon bend, the ice across country to Port Clarence, where a cable was to connect with the Siberian lines. The latter would leave the Chukotka peninsula, cross the neck of the peninsula of Khatanga and skirt the eastern of the Ochotsk sea, joining the Russian lines at Nakhodka. It is stated that a large part of the fourteen millions of dollars represented by the stock was actually expended in the work, at all events a large amount of money was spent, and the only returns were those public benefits implied by an increase of geographical and other scientific knowledge and the training of a number of explorers and investigators.

SURVEY AND SUPERVISION OF INDIAN TERRITORY

By HENRY GRASSETT,

Chief Topographer, Land Status Geological Survey

The condition of things in Indian Territory is anomalous. The Territory is an area of some 31,887 square miles, included among what are called the Five Civilized Tribes—the Chickasaws, Choctaws, Chickasaws, Creeks and Seminoles. The reservation of each tribe is being owned by the tribe. Such a thing as private ownership of land is unknown. Each individual is entitled to do so is, however, permitted to take up and occupy any land which is not already occupied, but in so doing is does not acquire title.

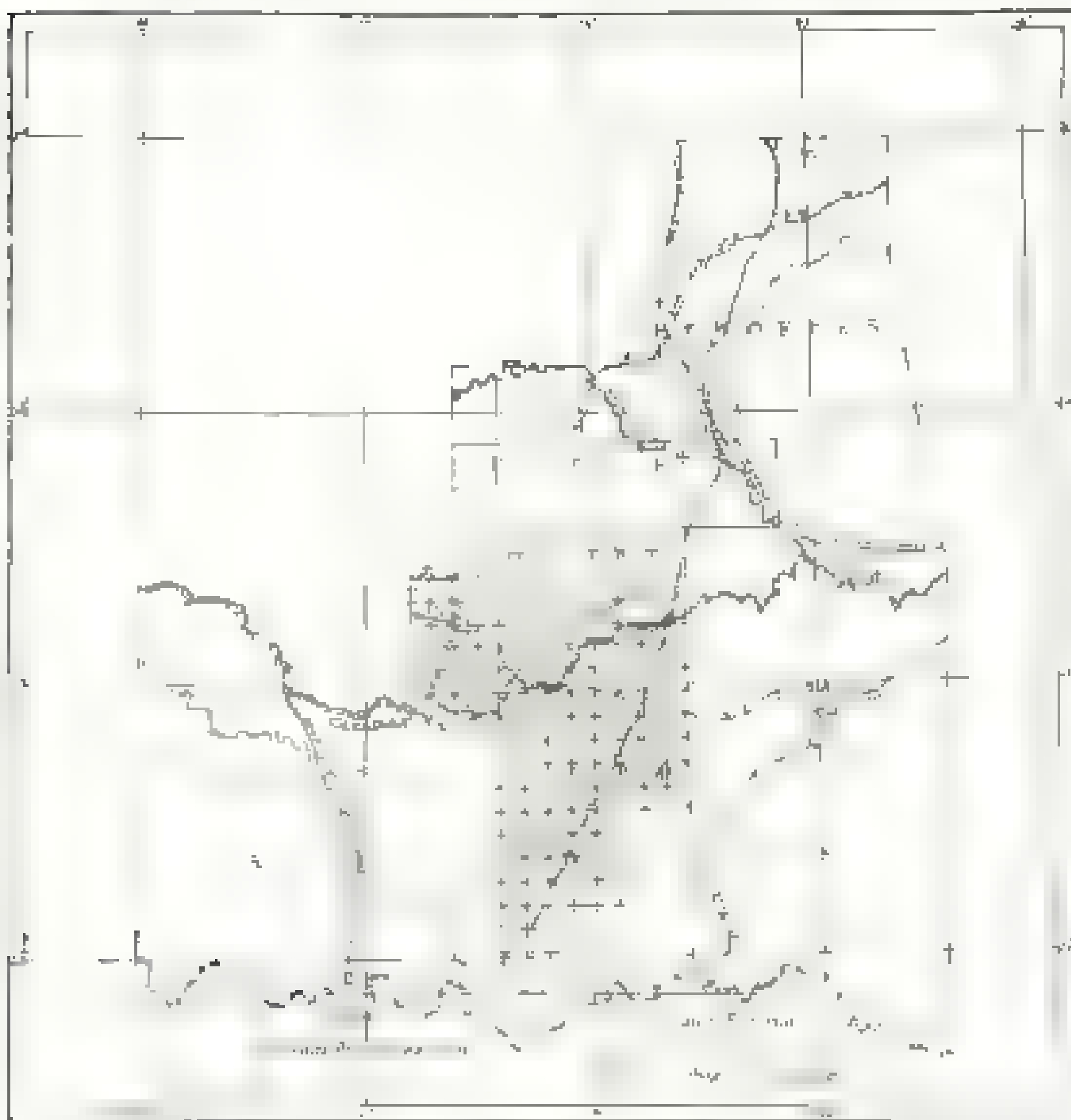
The population of the Territory consists of some 50,000 Indians, a few whites who have married Indian women and have their acquired members up in the tribe, with the accompanying privileges and emoluments, a few thousand negroes, mostly the descendents of slaves, and a large number, variously estimated, at from 100,000 to 200,000, of whites, who are living in the Territory in different ways, some legally upon the payment of a small tax, others without the aid of right or authority. These latter are known as interlopers.

As might be expected, in the competition of affairs the whites who have married Indian women, being much shrewder and more experienced than the Indians, have acquired by the right of occupation nearly all the land and property which is worth having in the Territory. They own, if it can be called owning, all the best farming and grazing land, all the timber and what is of an immediate value, all the town sites, and all the mineral land which is worth having, and by leasing that property to whites they are rapidly acquiring great wealth.

Although in many respects quite advanced in the arts of civilization, the government has been deceived by these Indians are weak and neglects it. So far as the control of the Indians themselves is concerned, they may have no power, but at present they are armed and equipped with and control a large body of whites, outnumbering the negroes at least three to one, and composed largely of the right lawless frontier element. Indeed, were not the tribal governments reinforced by the power of the United

states courts the Territory would long ago have been in a state of anarchy.

The situation of affairs instead of improving with time, is rapidly becoming worse inasmuch as the number of interlopers in the Territory is constantly and rapidly increasing. The rapidly



growth of affairs is plainly the accumulation of a series of Government failures. It dates from the present administration of the Indian Bureau, the adoption of the Indian land laws, and the mismanagement of the land titles.

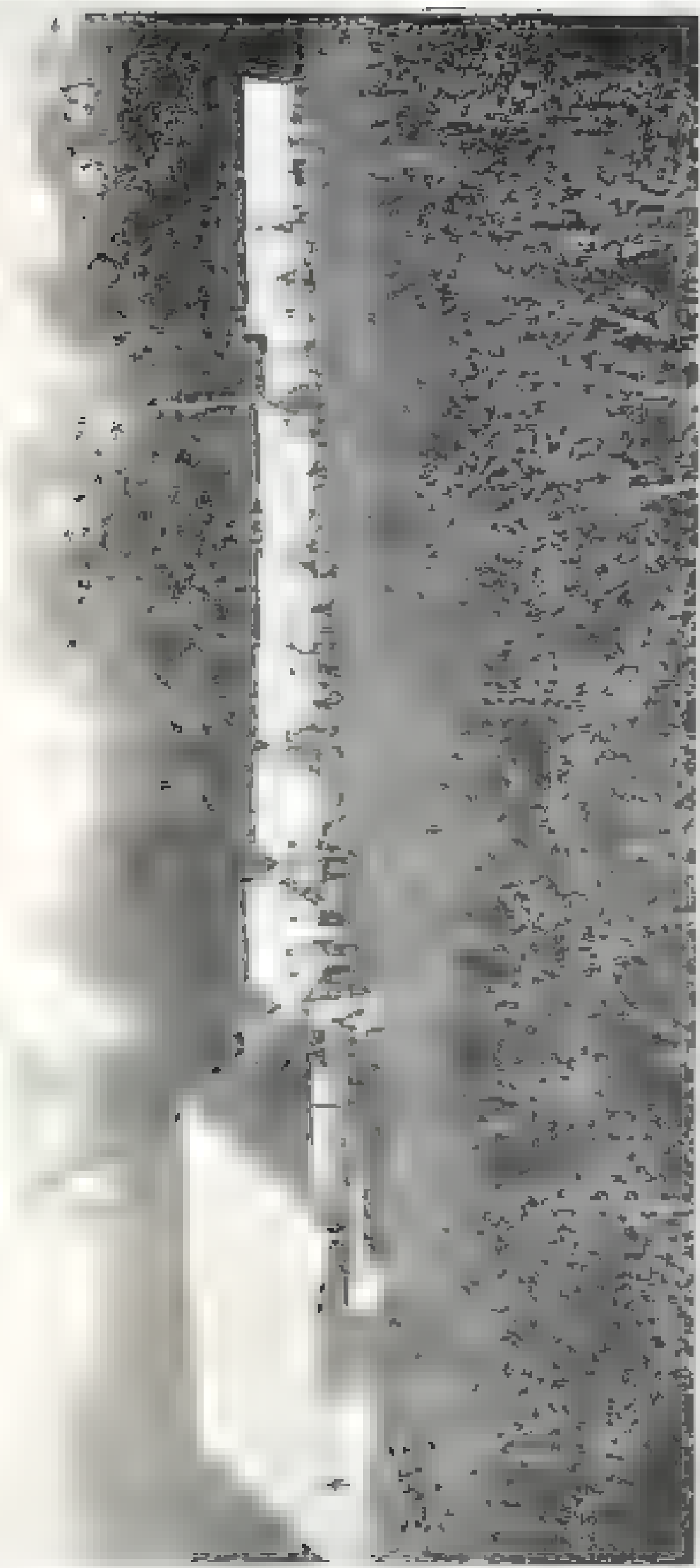
It is a result of the Government's failure to create a land title system for the

purpose of inducing them to accept their lands in severalty. In pursuance of this object two different commissions have been appointed, each of which has spent several months in the Territory endeavoring to obtain a hearing from the tribes, but to a far with not the slightest result. The tribes have declined absolutely to treat with them upon this subject.

During the progress of these attempts at negotiation Congress has taken another step in the same direction. In March 1866 an appropriation of \$200,000 was made by Congress for commencing the survey and subdivision of the lands of the Territory, being the necessary preliminary step toward settlement. This work was placed by the Secretary of the Interior in the hands of the Director of the Geological Survey, instead of being let out on contract, as has been done in all cases of subdivision heretofore. The Chickasaw nation was excepted as it was subdivided in 1852. The work was commenced in April 1866, on the following plan. The Indian base line, which forms the base line of the Chickasaw nation and of Oklahoma, was adopted for carrying the work into the other nations. The second general meridian east of the principal meridian of the Chickasaw nation was run, northward and southward as a principal meridian for the other nations. It is upon this general system of surveys or forms to that in the Chickasaw nation and in Oklahoma, the work has been planned, so as to make the detection of any errors which may have been committed in carrying out the work.

Two parties have been engaged continuously since April last in running standard lines (or, as declared as such, correction lines) by which the country is divided into blocks twenty-four miles on a side. The township extensions were run by two parties, two parties being at first engaged for this work, which were subsequently increased to four. The subdivision of township into sections was carried out by still a third set of parties, a lot of which were engaged at a special meeting held at Fort Smith in May, and the number was subsequently increased to sixteen. Thus the entire work of subdividing the land is undertaken by three distinct sets of parties, the work of each checking that of the others.

Further on, a statement of the details of the work has been carried over the area subdivided, and the relations in this triangulation have been connected with some of the established corners. This is done not only for the purpose of checking and correcting errors, but also to furnish reference points for the recovery of missing corners,



for the triangulation, and the base line was measured on the track of the Missouri, Kansas and Texas railway near Savannah, and the exact position of this place was determined as follows:

The parties, by which it is to be understood the parties engaged in running the section lines, are grouped, four of them being in charge of an expedition and survey connected with the permanent corps of the United States Geological Survey, who supervises the work closely and attends to the executive management of the outfit, and who, moreover, commonly with the aid of an assistant, maps the topography of the area subdivided. This latter duty is rendered light by the fact that the surveyor in running the line locates the points of crossing of every stream, road, or other natural or artificial feature which he encounters in the course of his line. Thus at intervals of a mile or less all the features are located and laid to scale for the topographer to do except to sketch those features between these points of location.

The progress made in this survey up to the end of January of the present year is set forth in a report which has been made to the Secretary of the Interior. It appears from this that in the primary triangulation 43 stations have been selected, signals erected at each, and angles measured from them. By means of these stations an area of about 10,000 square miles, or about five-twelfths of the area of the Territory, excluding the Cherokee reservation, has been entered. In the subdivision work 117 miles had been run out of an estimated amount of 37,000 miles to complete the Territory, or about one-fourth of the entire work. Of this work a large portion is of standard lines—that is, standard parallel and correction lines; 1,300 miles are exterior lines of townships, 8,770 miles are section lines, and the remaining 241 miles are the remainder lines of streams. The work thus far completed takes the subdivision of 241 townships and 20 fractional townships. It is included, mainly in the western part of the Cherokee Nation, embracing all of the Seminole country and some of the Chickasaw country, while standard lines have been run in the Cherokee Nation. The progress is represented upon the sketch map accompanying this paper.

The mapping of topography has followed closely after the work of subdivision and up to the date given above an area of 4,200 square miles has been thus mapped.

"FREE BRIGHS" IN THE UNITED STATES*

By JAMES H. BLOOMETT,

Late Special Agent in Charge of Education

Three bridges across the Potomac river connect the District of Columbia with the State of Virginia. The upper one, known as the Chain Bridge, just below the Little Falls, the head of tide-water, is too far from dense population to be frequented by foot passengers. Three miles below the Chain bridge is the Aqueduct bridge, practically the head of navigation, since only small pleasure boats and scows to bring stone from the quarries go above it.

Along the Virginia shore, above the Aqueduct Bridge, are various "resort houses," more or less permanent, occasionally for legitimate relaxation and pleasure, but viewed with suspicion by the authorities on both sides of the river, justified by results.

Seasonal camps by the mile. At the Virginia end of the Chain Bridge is a struggling group of houses known as Bethel, a favorite place for those who want to go beyond the police restraints of the District of Columbia, and particularly for those interested in the gambling device known as policy, a sort of lottery especially attractive to the colored people.

Between the Aqueduct bridge and the Long bridge are two miles or more farther down at the upper extreme of dense habitation, the low ground on the Virginia side is fringed, with but few houses, and is a meeting place for various kinds of shows and amusements, and the temporary theatre and medical and confection factory. The high lands contain the Government reservation comprising Fort Myer and the Arlington national cemetery. Close to the Virginia end of the historic Long Bridge are a few houses known as Jackson City. Free and free fight prize fights, and also the convenient place for gambling in various forms. The race track, known as Alexandria Jockey Club, is maintained irregularly, a race-course. There is also a minor show and race-course, known as St. Asaph. A good part of the racing in August

* This publication is published by the American	
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Education for purposes	

of the Capitol has been that known as "outlaw racing"—that is, with horses or with jockeys not of good standing with the regular racing associations. Just below St. Amph is the city of Alexandria, which is popularly regarded as a part of Alexandria county, to share whatever of good or bad repute attaches to it.

At the census of 1790 and this vicinity was part of Fairfax county, except that Alexandria already had a separate court and was exempt from county taxes. For the organization of the District of Columbia, Virginia ceded to the General Government the jurisdiction* over a tract bounded by the line extending ten miles northwest from the mouth of Hunting creek, a line forty miles east from the terminus of the first, and the river, containing an area said to be thirty-two square miles. In 1801 Congress erected this area ceded by Virginia into a county, to be called Alexandria county, but expressly retaining for Alexandria all existing chartered rights. In 1843 the United States returned the tract to Virginia, which has continued to be generally known as Alexandria county, though the policy of separation of city and county suspended for half a century, has been renewed. The combined population of city and county in 1900 was 18,507, of which 14,330 persons were in the city of Alexandria, which is not a part of Alexandria county, although its name, its vicinity, its recent affinity with the county, and the presence of the county buildings tend with most persons to make the residents more properly responsible for the unlawful conduct near by. Many persons, who are doing much to the measure of success attained, do not see why the governor of Virginia sent officers to break up the reported practices in the county. They do not appreciate the weakness of the real Alexandria county when the gambling elements of the neighboring cities flow out upon it. It has had a white over 4000 persons in 1860, of whom, after deducting 104 on the military reservation, over one half (212%) are of negro descent, and not yet of much proprietary responsibility.

Alexandria is but an example of the cities of Virginia from the earliest days. James City, better known as Jamestown, and now extinct, was established as the chief city in 1607. Williamsburg was set apart as a city to be used for no other purpose whatever, and it lived as the capital in 1699 and again in 1706, in a century of population it was a gradual plan to put in each county

*The original compact had in the existing provisions. It was, however, erroneously stated that this original possession was transferred.

A bill is pending for creation of county from the old city of Alexandria.

a similar town for commercial purposes, especially for warehousing and marketing tobacco. Norfolk, chartered as a borough in 1757, has lost that name, but its relations to the county are to-day the same. The original charter graciously defined, strengthened, and confirmed, in points of dispute, in favor of the municipality. At first the Norfolk county buildings were in Norfolk, and a special clause in the charter reserved proprietary rights in them to the county. Later legislation authorized their sale and the erection of county buildings outside of Norfolk. The buildings are now in Portsmouth.

In 1776 many boroughs which had been given separate representation in the assembly were cut off by a law which prescribed that no borough with a population less, for seven successive years, than half that of any county should be separately represented. In the same year the delegate for William and Mary County, specified in its charter, was cut off.

In the state law for apportionment of members of Congress, 1802, the following names of towns are given as separate town names: first, East District, Fredericksburg; second, Norfolk, Portsmouth, and Warrimour; third, Richmond and Manchester; fourth, Petersburg; fifth, Darro and the town of North Dumfries; sixth, Lynchburg, Bedford, and Roanoke; seventh, Charlottesville, and Wolfert; eighth, Alexandria; ninth, Bristol; tenth, station. To these are to be added Rivers Vista in the tenth district, chartered on the day of the approval of the apportionment bill, and Newport News for which the bill was signed January 18, 1846. The conditions for the town of North Dumfries are in transition. It has been a town independent of Pittsylvania county, but politically dependent on Darro. The name has recently been changed to Soapstone, and just two days before its incorporation it was so determined by a popular vote whether it should be consolidated with Darro.

In early days there was a disposition in certain other colonies to establish cities independent of counties. In New Jersey and Maryland such early independent cities as received charters were early cut off. In Pennsylvania the independent German townships were absorbed in the formation of counties and the county were overruled by the governor. In Virginia, from the incorporation of Queen City in 1784, it has been the steady policy to have the cities dependent on the counties. At one time a town called

* By popular vote, on February 27, Soapstone is to become a part of Darro in an July.

to find an occasional participation of urban residents and rural residents in local affairs. But on examination of charters it will be found that this extends only to subjects expressly named in any instance.

If one will examine the scheme of government for the city and county of St. Louis, Missouri (1878), he will find that all power of county officers was arrogated. The same act restored their power for the rural portions, now St. Louis county, leaving the city to be provided with a separate government in the same act. The situation in Virginia may be clearer if law legislature is deemed to have abolished all county authority in any city under consideration, and then to have restored by name such items of power as circumstances demanded.

The present cities of Virginia have the following characteristics:

The Code defines a city as a town having over 5,000 inhabitants and a hustings court, and defines a town as an incorporated town having less than 5,000 population.*

The cities have district courts. Their citizens do not pay county taxes on city property. They do not serve on county juries. Deeds and other papers affecting city property are recorded by city officers and not by county officers.

Generally, residents of cities do not participate in county elections. Exceptionally, they may hold county offices, more exceptionally, they may vote for county officers.

Generally, city police courts have jurisdiction only in the beyond corporate limits. Exceptionally there is a limited concurrent jurisdiction of city and county courts, as over waters adjacent to the city of Norfolk and Portsmouth and to Norfolk county.

Usually, the county and the city have each a set of public buildings with a their respective borders. Except rarely, no authority is given to a county for buildings in a city, as when, at the chartering of the city of Manchester (Cheshire, Conn.), it was

... it occupied as water. Norfolk county was authorized to arrange with the city of Portsmouth the construction of a rail

... county officer may not serve writs in a city. Ex

... he can serve writs to the county residents of his

county, as witnesses may be summoned for Court held county in the city of Lynnhurg.

Except for individually specified purposes, county and city are not meant to be identical.

The city of Newport News, Virginia, was organized January 24, 1898, under a charter naming officers to serve in July. The charter contains the following paragraph:

"1.5. The city of Newport News, its real and personal property and other subjects of taxation, and its inhabitants shall be exempt from all assessments and taxes in any way of taxes imposed by the authorities of Warwick County for any purpose whatever, except upon property owned in the said county by the inhabitants of said city, from and after the first day of January next from 1900, and hereafter, not including lands or interests therein to be served upon juries or work upon roads in said county except in such cases as are provided for by the laws of the state.

This extract states an exemption of residents in cities from county taxes and from duty on county juries prevalent in the state.

The present facts concerning the cases of Virginia are little known beyond the state. The Congressional Directory is considered as a public document out of the state that shows the cities separately. The Civil Service Commission has found it necessary to recognize the fact that of a citizen of a city or of a resident of that state, as in Louisiana and theories of Virginia were a certificate from a county court was contemplated. A list of paying no county taxes occurs in the report of the Joint Census, 1880, volume 1, page 107.

Under the 8, in 1880, county, a city is part of a county, it is set apart that a dense population may result in new values and impose new taxes to meet special demands for public welfare and necessities for city expenses.

There is a city of Harrison, Arkansas, a separate corporation, whose incorporated subjects common to the others led to exceptional exemption of cities from county taxes. Harrison, Murkland, by records showing, it commenced in 1833, and St. Louis, Missouri, founded a population in 1876.

These two examples are explained in the *Journal of the University of Virginia* in history and political science—local institutions of Maryland, in volume 7, and City Government of St. Louis, in volume 5. The latter have been examined and con-

of taking a township as the unit and yet the existence of an independent county control and of county taxes is based on certain historical and works of civil government used in both school courses, and universities.

In many states the administration of the public schools is largely through township lines charged with that work and superimposed upon areas occupied by other public policies charged with other interests. There is a very general tendency to charter school districts independent of the town or the north or of the county at the south. In some states the notion of establishing a municipality to do what the larger unit of which it has been a part is not ready to do but is far to increase. This form of legislation is more common in the west and south than in the northeast. The forms which these educational and other associations are numerous, and the complicated procedures are often elaborate.

The complications are probably most intricate in those states where the form of the public domain, which have township organization, a modified form of the town government of New England. It would be most curious not to find illustration to the organization in which possess taxing powers, disregarding and various municipalities for details of administration of a larger unit, when a village proper is not a unit of a county without taxing power. National, state, and county taxes bear upon property owners throughout the country, with the exception of county taxes in Louisiana, Baltimore, and cities of Virginia, as usually explained. The national taxes are so largely collected at government bulk before their distribution that most consumers rather than producers pay them. The state taxes themselves that nobody else pays them.

How the county tax is made for all kinds of variations. The congressional towns of the land survey, six or less square, in the simplest organization become a school township—a plan encouraged by the grant to the state of a section or of two sections or by late states in a township for school purposes. This school corporation is often subdivided into districts, one with its taxing power. There are instances of superimposed incorporation of the town as a high school district with taxing power. Turning from school administration, we find the same area made a civil township, with care of roads, the poor and other subjects. Yet in this township may grow up a compact body of population to be chartered as a village, a town, or a city according to circumstances, with taxing power for police and other purposes. In some instances, like Springfield, Illinois, these units will as-

assume the charge of schools, in others, like Aurora, Illinois, the city does not administer the schools, which remain under the districts in which the school township was divided.

A citizen may therefore buy a house for a vote to receive of taxes for a school-township and the district for common schools and the general township for a specialty. He may have in addition the city township tax and the corporate tax. When the school district is given a charter making it independent of township, the supervision of taxes is modified. A valuation would hardly suffice to estimate the variations and combinations of duties of the taxpayer in a broad state, or even in different parts of the same state, growing out of the separately chartered taxing powers and their limited interdependencies.

The cities of Washington, D. C., which has practically absorbed Washington county and become identified with the District of Columbia; Philadelphia, Pennsylvania; New York—Brooklyn (January 1, 1898), New York, New Orleans, Louisiana, created—save with Philadelphia, New York, and Kings counties and Orleans parish respectively, but containing to exchange some functions of counties and San Francisco, California identical with San Francisco county represent an exception to the rule which have filled county boundaries and not an independence of counties.

GEOGRAPHIC LITERATURE

The receipt of a somewhat number of new publications published in this number of the magazine are presented to the public over with a view of the entire Department of Geographic Literature.

PROCEEDINGS OF THE NATIONAL GEOGRAPHIC SOCIETY, SESSION 1895-'96.

Special Meeting, January 27, 1896.—Vice-President Greeley in the chair. Mr. Richard Van Orman, Commissioner General from Costa Rica to the Atlanta Exposition, read a paper with lantern-slide illustrations, on "The Geography, People and Resources of Costa Rica."

Regular Meeting, February 7, 1896.—Vice-President Merriam in the chair. Mr. W. J. Metcalf delivered an address, illustrated by lantern slides mostly from aerial photography, entitled "A Squam in Squatted Expeditions among the various forms of the Gulf of California."

Special Meeting, February 14, 1890.—President Hubbard in the chair. Commander Z. W. Tanner, United States Navy, described his cruise to the coast of the United States. First Commanded a steamer *Albatross* from the north Atlantic to the north Pacific, via the strait of Magellan and the Galapagos islands. Practical details of his scientific work and views of the various ports visited were given by means of lantern-slides. [See p. 109.]

Regular Meeting, February 21, 1890.—President Hubbard in the chair. Prof. George C. Parks, United States Service, read a paper, "Insulated by an Island Sea, on Landward and Oceanward Geology, Society, and Resources."

EXHIBITS.—New ones were introduced and called as follows:

February 3.—John M. Cushman, Dr. F. P. Dewey, Herbert Everett, Capt. D. D. Van and, U. S. A., Edward M. Kennedy, Com. Navy of A. V. Co., U. S. A., R. A. Pearson, W. S. Field, W. P. Robinson, Wm. A. Taylor, Col. W. B. Thompson, Thos. L. Watson, Leon Andrew D. White.

February 24.—Dr. J. C. Adams, W. H. Baldwin, Jr., Miss Amy M. Bradley, Levi J. Bryant, Mrs. M. L. Byington, Mrs. J. A. Campbell, H. W. Chassey, U. S. A., J. Ashmead Cooper, Com. W. P. Craig, U. S. A., Cassius Denckla, Pay Inspector L. A. Finney, U. S. N., Chief Justice Melvin W. Fisher, Col. D. S. Gordon, U. S. A., Dr. Ida J. Heberger, F. J. Heberger, James G. Jester, Lieut. W. Lucy Kenay, U. S. A., Mrs. W. H. Kerr, T. A. Lambert, James B. Lambie, Nels J. Larson, Daniel W. Lloyd, Wm. G. Lown, Samuel Mackay, Chas. A. Mason Mann, Jr., Edward J. Mayhew, Com. John L. Moberd, U. S. N., W. Henderson Morse, Owen Owen, A. S. Porham, August Peterson, Dr. Chas. V. Pottey, Robert A. Phelps, Mr. J. B. Prodigiously, Minnesota, Rev. Abner M. Prescott, J. M. Reiman, John W. Saville, Thos. W. Smith, Capt. J. A. Snyder, U. S. A., W. E. Spear, Percie Thompson, Capt. R. Vance, U. S. A., W. L. Verwood, Dr. John L. Walsh, John Sumner Welch, Chas. W. White, Ernest W. Winsor.

Obituary.—General John C. Brown, a distinguished officer and gallant soldier, died at Baltimore, February 6, 1890, and was at the United States Military Academy in 1847. He rose to be a lieutenant-general in the regular Army and a major-general of Volunteers. At the age of 19 he went to Florida and the New Mexico Territory to take part in the Mexican war and in the war for the Union. He served with conspicuous gallantry, winning distinction whether he was commander of a regiment, a brigade, a division or an army corps. The most desperate battles of the army of the Potomac found him at the front, and he was severely wounded both at Fredericksburg and Gettysburg. As a man, General Brown was greatly respected, and The National Geographic Society deplains in his death the loss of a valuable member, was in the course of 45 years of active service and gained a practical knowledge of the geography of the United States such as few men have the opportunity of acquiring.

So, as it happened with Professor W. H. Dall, our old work as an explorer would emerge from the reading of a report we had published (1902) in the *Journal of Commerce*—a rather long journal, in part on one of his expeditions to the Arctic region. Then, however, a very interesting expedition to the Arctic was in the air.

He continued his extensive and successful work in Alaska and the North Pacific region for the long period of 30 years, have led by his recognition as one of the best informed men of the time on all matters relating to that most interesting and important geographical section of the globe. After an abundant amount of commercial telegraphic report in 1877, Mr. Dall returned for some time to the United States, supervising the transportation of Alaska to the rest of the continent by the railroad system. On his return, he published numerous articles of great economic value, and in 1879 appeared the well known work on Alaska and its Resources. As an assistant in the U. S. Coast Survey from 1873 to 1874, he devoted himself largely to Alaskan studies making expedited visits to the far north and publishing from his observations on the local fauna and flora concerning it. In 1881 he joined the U. S. Geological Survey, of which he has since remained an active member. He is also closely connected with the Smithsonian Institution, of which he is an honorary curator.

The proposed permanent Chairmanship-school of science and commerce and investigations in the Department of Agriculture, to give recognition and continuity to the many-sided scientific work of the Department and to complete the good work done by the present secretary in protecting the scientific force from the onslaught of the political opposition, has excited great interest in the scientific world and will find a very hearty expression of favorable opinion in a large number of eminent scientists who support the proposition. Within a brief period and last

February 18, President Columbia and the faculty of Johns Hopkins, President Dwight and the faculty of Yale, President Seymour of Cornell, President Law of Columbia, President Adams of Wisconsin, President Fiske of the University of California, President A. A. Wood of the University of Minnesota, and the President of the American Institute of Technology, the Secretary of the Lawrence Scientific School at Harvard, the President of the University of New York, the President of the American Association of Washington, and the presidents and other officers of various state universities and colleges have given their approval to the proposed chairmanship. While the recommendation is scarcely likely to be favorably acted upon at the present session of Congress, it is too obviously merited to the creation of a more effective and at the same time more economical administration for it to fail in the interest of good government in general—for its adoption to be long delayed.

A preliminary announcement of the Mexican census of 1880 gives a total population of 12,542,000, as against 11,000,000 at the census of 1850 and 11,452,000 as officially estimated in 1880. The population of the principal cities is said to be as follows: City of Mexico, 350,000; Puebla, 175,000; Guadalajara, 150,000; San Luis Potosí, 100,000; Monterrey, 60,000; Mexico City, 50,000; Pachuca, 40,000; Toluca, 30,000; and Veracruz, 20,000.

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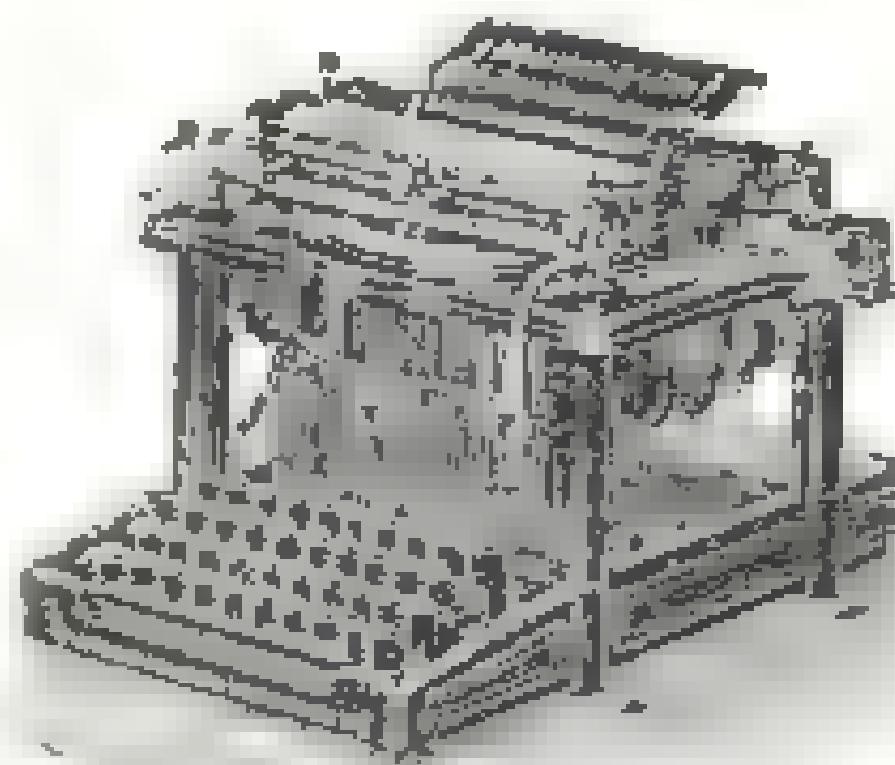
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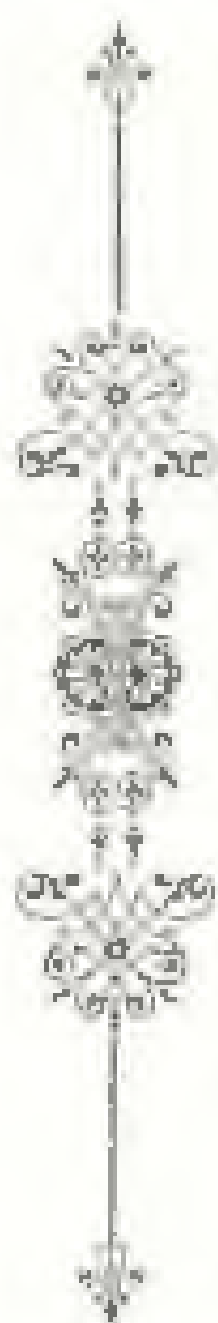


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